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Docket No. 1567.1021

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re the Application of:

Jeawoan LEE, et al.

Serial No. 09/986,919

Group Art Unit: 1745

Confirmation No. 6274

Filed: November 13, 2001

Examiner: Susy N. Tsang Foster

For: POSITIVE ELECTRODE FOR A LITHIUM-SULFUR BATTERY AND A LITHIUM-SULFUR BATTERY INCLUDING THE POSITIVE ELECTRODE

**RESPONSE TO RESTRICTION REQUIREMENT**

Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

Sir:

This is responsive to the Office Action mailed May 4, 2005, having a shortened period for response set to expire on June 6, 2005 (June 4, 2005 being a Saturday), the following remarks are provided.

I. Provisional Election of Claims Pursuant to 37 CFR §1.142

Applicants provisionally elect the claims of Group I in response to the preliminary restriction requirement set forth in the Office Action.

II. Applicants Traverse the Requirement

As an initial point of clarification, the Examiner asserts that claims 13-31, 42, and 43 of Group II are drawn to a lithium sulfur battery combination which can be used separately from the Group I claims since claim 25 does not recite certain features of claim 1. However, it is respectfully submitted that the Examiner's analysis does not reflect the features of claim 13.

Specifically, claim 13 recites, among other features, "a positive electrode comprising a current collector having pores comprising at or greater than 60% porosity and less than 90% porosity based on an overall volume of said current collector, a sulfur-based active material, a conductive agent, and a binder disposed in the pores of the current collector," "wherein the

current collector comprises one of a metal foam having the pores and a non-woven fabric coated with a metal to provide the pores."

By way of comparison, claim 1 recites, among other features, "a current collector having pores comprising at or greater than 60% porosity and less than 90% porosity based on an overall volume of said current collector," and "a positive active mass comprising a sulfur-based active material, a conductive agent, and a binder disposed in the pores of said current collector," "wherein the current collector comprises one of a metal foam having the pores and a non-woven fabric coated with a metal to provide the pores."

As noted in MPEP 806.05(c), a combination and a subcombination may be different inventions where "it can be shown that a combination *as claimed*: (A) does not require the particulars of the subcombination as claimed for patentability (to show novelty and unobviousness), and (B) the subcombination can be shown to have utility either by itself or in other and different relations" (italics added). As such, the focus in determining whether the combination is different from a subcombination is based upon the claimed invention. It is respectfully submitted that the Examiner has not analyzed the invention of Group I to determine if, *as claimed*, the lithium sulfur battery as recited in claim 13 of Group I is separately usable from the invention of Group I. Therefore, it is respectfully submitted that the Examiner has not set forth sufficient evidence that the invention as claimed in claims 1-12 and 44 is separately usable from the invention as claimed in claim 13 as is required to maintain a prima facie restriction requirement under the two way standard set forth in at least MPEP 806.05(c).

For at least similar reasons, it is respectfully requested that the Examiner reconsider and withdraw the restriction requirements as to claims 14-24, which depend from claim 13, and claims 29, 30, 42 and 43, which depend from claim 25 and recite ranges of porosities and other features generally within the evidence of distinctiveness of Group I as set forth in the Office Action. Therefore, it is respectfully submitted that Group I further includes claims 13-24 and 29, 30, 42 and 43.

Insofar as Groups I and II are concerned, it is believed that the claims of Group II are so closely related to the elected claims of Group I that they should remain in the same application to avoid imposing any undue burden, expense, and delay on the Applicants in preserving the invention recited in the claims of Group II. The elected claims of Group I are drawn to a positive electrode having positive active mass comprising a sulfur-based active material and a current collector as set forth above in relation to claim 1. Claim 13 of Group II has the features set forth above, and claim 25 recites a "positive electrode comprising a current collector having pores ... ,

and a positive active mass comprising a sulfur-based active material disposed in the pores contacting the conductive surfaces," "wherein the current collector comprises a carbon coated aluminum current collector." As such, it is believed that the Examiner's search would naturally encompass both technologies of Groups I and II.

While the Examiner has identified different sub-classifications for the claims in Groups I and II, it is believed that classification is not conclusive on the question of restriction. It is believed, moreover, that evaluation of both sets of claims would not provide an undue burden upon the Examiner at this time in comparison with the additional expense and delay to Applicants in having to protect the additional subject matter recited by the Group II claim by filing a divisional application.

MPEP §803 sets forth the criteria for restriction between patentably distinct inventions. (A) indicates that the inventions must be independent (see MPEP §802.01, §806.04, §808.01) or distinct as claimed (see MPEP §806.05-806.05(i)); and (B) indicates that there must be a serious burden on the Examiner if restriction is required (see MPEP §803.02, §806.04(a)- §806.04(i), §808.01(a) and §808.02). Such evidence is required in order for meaningful review to be provided under the Administrative Procedures Act, 5 U.S.C. §706. In re Zurko, 59 USPQ2d 1693 (Fed. Cir. 2001). As such, beyond showing separate classifications in subclasses of the same class, it is respectfully submitted that the Examiner has not set forth sufficient evidence to show that the Examiner will experience a serious burden without imposing restriction which is out of proportion with the serious burden and inconvenience visited upon the applicant if restriction is required.

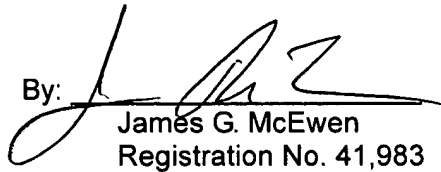
### III. Conclusion

Upon review of references involved in this field of technology, when all of the other various facts are taken into consideration, it is believed that upon reconsideration of the Examiner's initial restriction requirement, all of the pending claims should be examined in the subject application. In view of the foregoing amendments, arguments and remarks, all claims are deemed to be allowable and this application is believed to be in condition for allowance.

Should any questions remain unresolved, the Examiner is requested to telephone Applicants' attorney. If there are any additional fees associated with the filing of this Response, please charge the same to our Deposit Account No. 503333.

Respectfully submitted,

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